

Borehole

41-05-05Log Event **A****Borehole Information**

Farm : <u>SX</u>	Tank : <u>SX-105</u>	Site Number : <u>299-W23-125</u>
N-Coord : <u>35,405</u>	W-Coord : <u>75,750</u>	TOC Elevation : <u>662.12</u>
Water Level, ft :	Date Drilled : <u>5/31/1970</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>135</u>	

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	

Logging Information

Log Run Number : <u>1</u>	Log Run Date : <u>5/25/1995</u>	Logging Engineer: <u>Gary Lekvold</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>22.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>5/26/1995</u>	Logging Engineer: <u>Gary Lekvold</u>
Start Depth, ft.: <u>21.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>132.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

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Analysis Information

Analyst : D.C. StromswoldData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 8/11/1995**Analysis Notes :**

This borehole was deepened to 135 ft in 1973.

The borehole was logged in two runs: run 1 from 0 to 22 ft and run 2 from 132 to 21.5 ft. The counting time at each 0.5-ft station was 100-s.

The casing thickness was 0.25 in.; casing corrections for 0.25-in. casing were used during analysis.

Increases in the K-40, U-238 and Th-232 concentrations at about 68 ft indicate an apparent lithology change.

Cs-137 was the only man-made radionuclide detected, occurring continuously from the surface to about 19.5 ft, from 119.5 to 132 ft, and intermittently to TD. Also, continuous Cs-137 concentrations of about 1 pCi/g occurred at the bottom of the hole from about 123 to 132 ft. The highest concentration (other than the surface value) was about 3 pCi/g at a depth of 8 ft.

Log Plot Notes:

Three log data plots are provided. The Cs-137 concentration is provided in a separate plot to present the details of Cs-137 activity and contamination distribution. The error of the Cs-137 activity determination is shown by error bars that represent the 95-percent confidence interval. The calculated MDA is shown on this plot as open circles. If the calculated concentration is less than the MDA, it is considered a non-detect and the concentration is not reported.

A plot of naturally occurring potassium, uranium, and thorium (K-40, U-238, and Th-232) is provided to allow correlation of these data with geologic information. On the Th-232 plot, the MDA value is shown as zero at some depth locations. This zero value was a result of an anomaly in the commercial spectrum analysis software which has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the plot, the data were not reprocessed and corrected. Therefore, these MDA data points should be ignored.

A combination plot of individual radionuclide activities is provided that includes the total gamma-ray count rate calculated from the spectral data and the WHC Tank Farms gross gamma-ray log data acquired with the gross gamma-ray logging systems.